IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

to re Application of: al No.:

WENHUA LIN

09/991,893

iled:

November 5, 2001

Group No.: 2872

Examiner: Unknown

Docket No. LIGHT2180

For:

COMPACT OPTICAL EQUALIZER

CERTIFICATION UNDER 37 CFR § 1.8

I hereby certify that the documents referred to as enclosed herein are being deposited with the United States Postal Service as first class mail on this date 24 January 2000, in an envelope addressed to in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231

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Assistant Commissioner for Patents Washington, D.C. 20231

Sir:

INFORMATION DISCLOSURE STATEMENT

Applicant hereby cites the documents listed in accompany Form PTO-1449 with respect to the above-referenced patent application under the provisions of 37 CFR 1.97(b). Copies of the documents are attached.

The Examiner is respectfully requested to make the listed documents of record in connection with the prosecution of the subject application.

Respectfully submitted,

Date: 24 January 2002

Attorney for Applicant(s) Registration No. 30,298

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GRAY CARY WARE & FREIDENRICH 4365 Executive Drive, Suite 1100 San Diego, CA 92121-2133

Phone: 858/638-6747

Fax: 858/638-6727

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COMPLETE IF KNOWN Substitute for form 1449A/PTQ **Application Number** 09/991,893 11/05/01 **Filing Date** INFORMATION DISCLOSURE **First Named Inventor** Lin STATEMENT 2872 **Group Art Unit** (use as many she **Examiner Name** Unknown SHEET 1 **Docket Number** LIGHT2180

				U.S. PATENT DOCUMEN	ITS			
Examiner	014- NI- 1	U.S. Patent Document		Name of Patentee or Applicant	Date of Publication of Cited Document	Pages, Columns, Lines, Where		
Initials*	Cite No.1	Number	Kind Code 2 (If known)	of Cited Document	MM-DD-YYYY	Relevant Passages or Relevant Figures Appear		
	1	4,618,210		Kondo	10-21-1986			
	2	4,747,654		Yi-Yan	03-31-1988			
	3	4,813,757		Sakano et al.	03-21-1989			
	4	4,846,542		Okayama	07-11-1989			
	5	5,002,350		Dragone	03-26-1991			
	6	5,013,113		Soref	05-07-1991	TE		
	7	5,039,993		Dragone	08-13-1991	9 7		
	8	5,243,672	1	Dragone	09-07-1993	青一雷		
	9	5,412,744]	Dragone	05-02-1995	5 6 0		
	10	5,450,511		Dragone	09-12-1995	C - M		
	11	5,467,418		Dragone	11-14-1995			
	12	5,581,643		Wu	12-03-1996			
	13	5,706,377		Li	01-06-1998	282		
	14	5,841,931		Foresi et. al.	11-24-1998			
	15	5,938,811		Greene	08-17-1999	8		
	16	6,108,478		Harpon et al.	08-22-2000	00		
	17	6,118,909		Chen et al.	09-12-2000	7.		

				F	OREIGN PATENT DOCUMENT	rs		
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Examiner Initials*	Cite No.1	Office ³	Number4	Kind Code ⁵ (If known)	Name of Patentee or Applicant of Cited Document	of Cited Document MM-DD-YYYY	Where Relevant Passages or Relevant Figures Appear	Ţ6
,	18	EPO	0647861A1 ₁		AT&T Corp.	12.04.1995		
	19	EPO	0985942A2 t		Lucent Technologies, Inc.	15.03.2000		
	20	Japan	2-179621 v		Oki Electric Ind. Co. Ltd.	12.7.1990		
	21	Japan	6-186598 ~		Hitachi Ltd.	8.7.1994		
•	22	Japan	63-197923 ~		NEC Corp.	16.8.1988		

			OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	.,
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•	23		ABE, et al., Optical Path Length Trimming Technique using Thin Film Heaters for Silica-Based Waveguides on Si, Electronics Letters, September 12, 1996, Vol. 32-No. 19, pp. 1818-1820.	
	24	-	ALBERT, J., Planar Fresnel Lens Photoimprinted in a Germanium-Doped Silica Optical Waveguide, Optics Letters, May 15, 1995, Vol. 20-No. 10, pp 1136-1138	
	25		AMAN, M.C., Calculation of Metal-Clad Ridge-Waveguide (MCRW) Laser Modes by Mode Coupling Technique, Journal of Lightwave Technology, VOL LT-4, No.6, June 1986, pg 689-693	

			
Examiner Signature		Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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			OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cit No	-	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ₆
	52	IJ	GRANESTRAND, P. et al., Integrated Optics 4x4 Switch Matrix with Digital Optical Switches; Electronics Letters, VOL 26, No.1, Jan 4, 1990; pg 4-5	
	53	2	HIMENO, A. et al., Loss Measurement and Analysis of High-Silica Reflection Bending Optical Waveguides, Journal of Lightwave Technology, January 1988, Vol. 6-No. 1, 41-46.	•
	54	V	HSU, K.Y. et al., Photonics devices and Modules, www.cc.nctu.edu.tw/-ctr/lee_mti/research_topic/photonic_devices_modules.htm, pp 1-3.	
	55	200	HUANG, T.C. et al., Depletion Edge Translation Waveguide Crossing Optical Switch, IEEE Photonics Technology Letters, VOL.1, No.7, Jul 1989, pg 168-170	
	56	ø	HUTCHESON, L.D. et al., Comparison of Bending Losses in Integrated Optical Circuits; Optics Letters, VOL 5, No.6, Jun 1980, pg 360-362	
	57	V		
	58	4	January/February 2000, Vol. 6-No. 1, pp. 14-18.	1
	59	V	ITO, F. et al., Carrier-Injection-Type Optical Switch In GaAs With A 1.06-1.55 µm Wavelength Range; Appl. Physics Letters, 54(2) Jan 9, 1989; pg , 134-136 JACKMAN, N. et al., Optical Cross Connects for Optical Networking; Bell Labs Technical Journal, Jan-Mar. 1999; pg 262-281	ā
	60	V	JACKMAN, N. et al., Optical Cross Connects for Optical Networking; Bell Labs Technical Journal, Jan-Mar. 1999; pg 262-281	
	61	¥ .	JOHNSTON, I.R., et al., Silicon-Based Fabrication Process For Production Of Optical Waveguides; IEE Proc-Optoelectron., VOL 143; No.1, Feb 1996, pg 37-40	
	62	V	KAENKO, A. et al., Athermal Silice-based Arrayed-waveguide Grating (AWG) Multiplexers with New Low Loss Groove Design; TuO1-10pg 204-206	
	63	•	KASAHARA, R. et al., Low-Power Consumption Slice-Based 2x2 Thermooptic Switch Using Trenched Silicon Substrate, IEEE Photonics Technology Letters, VOL 11, No. 9, Sep 1999, pg 1132-1134	
	64	A	KHAN, M.N. et al., Fabrication-Tolerant, Low-Loss, and High-Speed Digital Optical Switches in InGaAsP/InP Quantum Wells; Proc 21st Eur.Conf.on Opt.Comm.(ECOC '95-Brussels), pg 103-106	
	65	•	KHAN, M.N. et al., High-Speed Operation of Quantum Well Electron Transfer Digital Optical Switches; pg 102-102c	
	66	~	KIRIHARA, T. et al., Lossless And Low Crosstalk 4x4 Optical Switch Array; Electronics And Communications In Japan, Part 2, VOL 77, No.11, 1994, pg 73-81	
	67	,	KIRIHARA, T. et al., Lossless and Low-Crosstalk Characteristics in an InP-Based 2x2 Optical Switch, IEEE Photonics Technology Letters, VOL 5, No. 9 Sept 1993, pg 1059-1061	
	68	•	KOKUBUN, Y. et al., Athermal Waveguides for Temperature-Independent Lightwave Devices, November 1993, 1297-1298, Vol. 5-NO. 11, IEEE Photonics Technology Letters.	
	69	1	KOKUBUN, Y. et al., Temperature-independent Narrowband Optical Fitter at 1.3 μm Wavelength by an Athermal Waveguide, 10th October 1996, Vol. 32-No. 21, Electronics Letters	
	70	-	KOKUBUN, Y. et al., Temperature-Independent Optical Filter at 1.55 µm Waveguide Using a Silica-Based Athermal Waveguide, 19 February 1998, Vol. 34-No. 4, Electronics Letters	
	71	•	KOKUBUN, Y. et al., Three-Dimensional Athermal Waveguides for Temperature Independent Lightwave Devices, 21 st July 1994, Vol. 30-No. 15, Electronics Letters	
	72	*	KOSTRZEWA, C. et al., Tunable Polymer Optical Add/Drop Filter for Multiwavelength Networks, Photonics Technology Letters, November 1997, Vol. 9-No. 11, 1487-1489.	
	73	/	LAAKMAN, K. D. et al., Waveguides: Characteristic Modes Of Hollow Rectangular Dielectric Waveguides; Applied Optics, VOL 15, No. 5, May 1976; pg 1334-1340.	

Examiner Signature			_	-	Dat	te Cor	nsider	red			 	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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			OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Ci No		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	Te
	74	\	LEE, T.P. et al., Al, Ga1, As Double-Heterostructure Rib-Waveguide Injection Laser, IEEE Journal of Quantum Electronics; VOL QE-11, No.7, July 1975; pg 432-435	
	75	•	LIU, Y.L. et al., Silicon 1x2 Digital Optical Switch Using Plasma Dispersion; Electronics Letters, VOL 30, No.2, Jan20, 1994; pg 130-131	
	76		MAK, G. et al., High-Speed Bulk InGaAsP-InP Electroabsorption Modulators with Bandwidth in Excess of 20 GHz, IEEE Photonics Technology Letter, VOL 2, No.10, Oct 1990, pg 730-733	<u> </u>
	77	•	MARCATILI, E., Improved Coupled-Mode Equations for Dielectric Guides; IEEE Journal of Quantum Electronics, VOL QE-22, No.6, une 1986; pg 988-993	
	78	•	MARCATILI, E.A.J., Bends in Optical Dielectric Guides; The Bell System Technical Journal, Sep 1969; pg 2103-2132	<u> </u>
	79		MARCATILI, E.A.J., Dielectric Rectangular Waveguide and Directional Coupler for Integrated Optics, The Bell System Technical Journal, Sept. 1969 pg 2071-2101	- C(
	80	:	MARCATILI, E.A.J., Slab-Coupled Waveguides; The Bell System Technical Journal, April 1974; American Telephone & Telegraph Company, VOL 53, No.4, April 1974	
	81	-	MIRZA, A.R. et al, Silicon Wafer Bonding For MEMS Manufacturing, Solid State Technology, Aug 1999, pg 73-78	
	82	•	MOERMAN, I. et al., A Review on Fabrication Technologies for the Monolithic Integration of Tapers with III-V Semiconductor Devices; IEEE:Journal3 of Selected Topics in Quantum electronics, VOL 3, No.6, Dec. 1997, pg 1308-1320	
	83	<u> </u>	MÜLLER, G. et al., First Low Loss InP/InGaAsP Optical Switch with Integrated Mode Transformers; ThC12.10; Pg 37-40	<u></u>
	84	ę.	NAYYER, J. et al., Analysis of Reflection-Type Optical Switches with Intersecting Waveguides, Journal of Lightwave Technology, VOL 6, No.62 June 1988; pg 1146-1152	
	85	•	NEGAMI, t. et al., Guided-Wave Optical Wavelength Demultiplexer Using An Asymmetric Y Junction; Appl. Phys. Lett. 54 (12), Mar 20, 1989; pg 1080-1082	
	86	`	NELSON, W. et al., Optical Switching Expands Communications-Network Capacity, Laser Focus World, Jun 1994, pg 517-520	
	87	4	NELSON, W.H. et al., Wavelength-and Polarization-Independent Large Angle InP/InGaAsP Digital Optical Switches with Extinction Ratios Exceeding 20 dB; IEEE Photonics Technology Letters, VOL 6, No.11, Nov. 1994; pg 1332-1334	
	88	•	NODA, Y. et al., High-Speed Electroabsorption Modulator with Strip-Loaded GalnAsP Planar Waveguide; Journal of Lightwave Technology, VOL LT-4, No.10, Oct 1986, pg 1445-1453	
	89	٠	OFFREIN, B.J. et al., Resonant Coupler-Based Tunable Add-After-Drop Filter in Silicon-Oxynitride Technology for WDM Networks, Journal of Selected Topics in Quantum Electronics, Vol. 5-No. 5, 1400-1405.	
	90	•	OKAMOTO, K. et al., Arrayed-Waveguide Grating Multiplexer With Flat Spectral Response; Optics Letters, Jan 1 1995; VOL 20, No.1; Pg 43-45	
	91	•	OKAMOTO, K. et al., Flat Spectreal Response Arrayed-Waveguide Grating Multiplexer with Parabolic Waveguide Horns, Electronics Letters Online, July 15, 1996, No. 19961120, pp. 1661-1662.	
	92		OKAYAMA, H. et al., 8x8 Ti:LiNbO ₃ Waveguide Digital Optical Switch Matrix; IEICE Trans. Commun.; VOL E77-B, No.2; Feb. 1944; pg 204-208	
•	93	•	OKAYAMA, H. et al., <u>Dynamic Wavelength Selective Add/Drop Node Comprising Tunable Gratings, Electronics Letters Online</u> , April 10, 1997, No. 19970607.	
	94	,.	OKAYAMA, H. et al., Reduction of Voltage-Length Product for Y-Branch Digital Optical Switch, Journal of Lightwave Technology, VOL 11, No.2, Feb 1993; pg 379-387	
	95	٧	OKUNO, M. et al., Strictly Nonblocking 16x16 Matrix Switch Using Silica Based Planar Lightwave Circuits, VOL 10, No.266, Sep 11, 1986	
	96	-	OOBA, N. et al., Athermal Silica-Based Arrayed-Waveguide Grating Multiplexer Using Bimetal Plate Temperature Compensator, Electronics Letters, 12th October 2000, Vol. 36, No. 21, pp 1800-1801	

Examiner Signature	Date Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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			OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T 6
	97	t.	RENAUD, M. et al., Compact Digital Optical Switches for Low Insertion Loss Large Switch Arrays on InP; Proc. 21st Eur. Conf. on Opt. Comm. (ECOC '95-Brussels), pg 99-102	
	98	•	RICKMAN, A.G. et al., Silicon-on-Insulator Optical Rib Waveguide Loss and Mode Characteristics, Journal of Lightwave Technology, October 1994, Vol. 12-No. 10, pp 1771-1776	
	99		ROLLAND, C. et al., 10 Gbit/s, 1.56 µm, Multiquantum Well InP/InGaAsP Mach-Zehnder Optical Modulator, Electronics Letters, Mai 4, 1993, VOL 29, No.5, pg 471-472	
	100	$\overline{\cdot}$	Santec Sales Brochure for year 2000 entitled "Optical Components")
	101	4	SCHAUWECKER, B. et al, Small-Size Silicon-Oxynitride AWG Demultiplexer Operating Around 725 nm, IEEE Photonics Technology Letters, Vol. [12 No. 12, December 2000	5
	102	^	SCHLACHETZKI, A. Monolithic IO-Technology-Modulators and Switches Based on InP, SPIE VOL 651 Integrated Optical Circuit Engineering III (1986), pg 60-86	=======================================
	103		SILBERBERG, Y. et al., Digital Optical Switch; Appl. Phys. Lett.; VOL 51, No.16, Oct 19, 1987, pg 152-154	-11
		-	SMIT, M.K., New Focusing and Dispersive Planar Component Based on an Optical Phased Array;	
	104		Electronics Letters; Mar 31, 1988, VOL 24, No.7; Pg 385-386	<u> </u>
	105	`	SMITH, S.D. et al., CW Operation of Corner Cavity Semiconductor Lasers; IEEE Photonics Technology Letters, VOL 5, No.8, Aug 1993 pg 876-879	
	106	٦	SNEH, A. et al., Compact Low Crosstalk and Low Propagation Loss Quantum-Well Y-Branch Switches; PDP 4-1 ~ 4-5	ļ
	107	4	SOOLE, J.B.D. et al., Use of Multimode Interference Couplers to Broaden the Passband of Wavelength-Dispersive Integrated WDM Filters; IEEE Photonics Technology Letters, VOL 8, No.10, Oct 1996; pg 1340-1342	
	108		STOLL, L. et al., 1:8 Optical Matrix Switch on InP/InGaAsP with Integrated Mode Transformers; Optical Switches and Modulators II, pg 531-534	
	109	1	STOLL, L. et al., Compact and Polarization Independent Optical Switch on InP/InGaAsP; TuB7.2; pg 337-340	L
	110	1	STUTIUS, W. et al, Silicon Nitride Films On Silicon For Optical Waveguides, Applied Optics, VOL 16, No.12, Dec 1977, pg 303-307	<u> </u>
	111	•	SUGIE, T. et al., 1.3-µm Laser Diodes with a Butt-jointed Selectively Grown Spot-Size Converter, ThB2-6, IOOC95, pg 52-53	
	112	•	TADA, K. et al., Bipolar Transistor Carrier-Injected Optical Modulator/Switch: Proposal and Analysis, IEEE Electron Device Letters, VOL EDL-7, No.11, Nov 1986, pg 605-606	
	113	٠	TAKADA, et al., Optical Spectrum analyzer using Cascaded AWG's with Different Channel Specings, Photonics Technology Letters, July 1999, Vol. 11, No. 7, pp. 863-864.	
	114	4	TAKAHASHI, H. et al., Arrayed Waveguide Grating for Wavelength Division Multi/Demultilexer with Nanometre Resolution, PWG-NTT-7	
	115	•	TAKIGUCHI, K. et al. Dispersion Compensation Using a Planar Lightwave Circuit Optical Equalizer, Photonics Technology Letters, April 1994, Vol. 6, No. 4, pp. 561-564.	
	116	^	TIEN, P.K. et al., Formation of Light-Guiding Interconnections in an Integrated Optical Circuit by Composite Tapered-Film Coupling; Applied Optics, VOL 12, No. 8, Aug 1973; pg 1909-1916	
	117	~	TOYODA et al., Thermoplastic Switch and Wavelength Tunable Filter using Polymer Waveguides, Abstract of paper presented at Opticomm 2001 on August 22, 2001.	
••••	118		TREYZ, G.V. et al., Silicon Optical Modulators at 1.3 µm Based on Free-Carrier Absorption; IEEE Electron Device Letters, VOL 12, No.6, June 1991; pg 276-278	
	119	`	TSUDA, H. et al., Performance Analysis of a Dispersion Compensator Using Arrayed-Waveguide Gratings, Journal of Lightwave Technology, August 2000, Vol. 18-No.8, pp 1139-1147.	

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	120	1	TSUDE, H. et al., Second- and Third-Order Dispersion Compensator Using a High-Resolution Arrayed Waveguide Grating, IEEE Photonics Technology Letters, May 1999, Vol. 11-No. 5, 569-571.	
	121	1	VINCHANT et al, InP 4x4 Digital-Optical-Switch Module For Multiwavelength Cross-Connect Applications; OFC '95 Technical Digest, Thursday ThK2, pg 281-282	
	122	٠,	VINCHANT, J.F. et al., First Polarisation insensitive 4x4 Switch matrix on InP with Digital Optical Switches, TuB7.3, pg 341-344.	1
	123	7	VINCHANT, J.F. et al., InP Digital Optical Switch: Key Element for Guided- Wave Photonic Switching; IEE Proceedings-J, VOL 149, No.5, Oct 1993; pg 301-307	
	124	7	VINCHANT, J.F. et al., Low Driving Voltage or Current Digital Optical Switch on InP for Multiwavelength System Applications; Electronics Letters, VOL 28, No.12, Jun 4, 1992; pg 1135-1137	17
	125	,	WAKITA, K. et al., Long Wavelength Waveguide Multiple Quantum Well Optical Modulators; IEEE Journal of Quantum Electronics, VOL QE-23, No.12, Dec 1987, pg 2210-2215 WANRU, Z. et al., Total Internal Reflection Optical Switch with Injection Region Isolated by Oxygen Ion Implantation; pg 1-10	1
	126	1	WANRU, Z. et al., Total Internal Reflection Optical Switch with Injection Region Isolated by Oxygen Ion Implantation; pg 1-10	
	127		YAMADA, et al., Cross Talk Reduction in a 10 GHz Spacing Arrayed-Waveguide Grating by Phase-Error Compensation, Journal of Lightwave Technology, March 1998, Vol. 16-No. 3, pp. 364-371.	
	128	1	YANAGAWA, H. et al., Polarization-and Wavelength-Insensitive Guided-Wave Optical Switch with Semiconductor Y Junction, Journal of Lightwave Technology, VOL 8, No.8, Aug 1990, pg 1192-1197	
	129	Ŋ	YU, S. et al., High Speed All-Optical Packet Routing Using A Vertical Coupler Crosspoint Space Switch	
	130	,	YU, S. et al., Ultralow Cross-Talk, compact integrated optical crosspoint space switch arrays employing active InGaAsP/InP Vertical Waveguide Couplers, Integrated Optical Crosspoint Switch Arrays, Siyuan Yu et a, CPD24-2	
	131		ZENGERLE, R. et al., Tapered Twin Waveguides For Spot-Size Transformation In InP, TheB2-5; IOOC 95; pg 50-51	
_	132		ZIRNGIBL, M. et al., Digitally Tunable Laser Based On The Integration Of A Waveguide Grating Multiplexer And An Optical Amplifier, IEEE Photonics Technology Letters, April 1994, Vol. 6-No. 4, pp 516-517	
	133	1	ZUCKER, J.E. et al., Strained Quantum Wells for Polarization-Independent Electrooptic Waveguide Switches, Journal of Lightwave Technology, VOL 10, No.12, Dec 1992, pg 1926-1930	
				
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work Reduction Action of 1995, no persons are required to response to a collection of information unless it contains a valid OMB number. **COMPLETE IF KNOWN** ON TORMANION DISCLOSURE Substitute for form 1449ATTO **Application Number** 09/991,893 Filing Date 11/05/01 First Named Inventor Lin STATEMEN APPLICANT 2872 **Group Art Unit** (use as many should be the second Unknown **Examiner Name**

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	,		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	1		include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published					
	26	•	AMANN, M.C. et al, Calculation Of The Effective Refractive-Index Step For The Metal-Cladded-Ridge-Waveguide Laser, Applied Optics, VOL 20, No.8, Apr 15 1981, pg 1483-1486					
	27	F.	BABA, S. et al., A Novel Integrated-Twin-Guide (ITG) Optical Switch with a Built-in TIR Region; IEEE Photonics Technology Letters; VOL 4, No.5, May 1992, pg 486-488					
	28	4	BENSON, T.M., Etched-Wall Bent-Guide Structure for Integrated Optics in the III-V Semiconductors; Journal of Lightwave Technology, VOL LT-2, No.1, Feb 1984; pg 31-34					
	30	7	BERRY, G.M. et al., Analysis Of Multiplayer Semiconductor Rib Waveguides With High Refractive Index Substrates, Electronics Editers; VOL 29, No.22; Oct 28 1993, pg 1941-1942					
	31	Υ.	BETTY, I. et al., A Robust, Low-Crosstalk, InGaAsP/InP Total-Internal-Reflection Switch For Optical Cross-Connect Application	<u>P</u>				
	32	•	BURKE, S.V., Spectral Index Method Applied to Coupled Rib Waveguides; Electronics Letters, VOL 25, No.9, Apr 27 1989, pg 605-506					
	33	g	BURNS, W.K. et al., Mode Conversion in Planar-Dielectric Separating Waveguides; IEEE Journal of Quantum Electronics, VOL QE-11, No.1, Jan 1975; pg 32-39	177				
	34	v	CAI, Y. et al., A Novel Three-Guide Optical Coupler Using A Taper-Formed Waveguide; j. Appl. Phys 69(5), Mar 1991; pg 2810-2814					
	35	ij	CAVAILLES, J.A. et al., First Digital Optical Switch Based on InP/GaInAsP Double Heterostructure Waveguides; Electronics Letters, VOL 27, No.9, Apr 25 1991, pg 699-700					
	36	منہ	CHEN, R.T. et al., Design and Manufacturing of WDM Devices; Proceedings of SPIE VOL 3234					
	37	-	CLEMENS, et al., Wavelength-Adaptable Optical Phased Array in SiO2-Si, Photonics Technology Letters, October 1995, Vol. 7-No 10, 1040-1041.					
	38	*	DAGLI, N. et al., Analysis of Rib Dielectric Waveguides; IEEE Journal of Quantum Electronics, VOL QE-21, No.4, Apr 1985, Pg 315-321					
	39	1	DAGLI, N. et al., Theoretical and Experimental Study of the Analysis and Modeling of Integrated Optical Components; IEEE Journal of Quantum electronics, VOL 24, No.11, November 1988; pg 2215-2226					
	40	F	DERI, R.J., et al., Low-Loss GaAs/AlGaAs Waveguide Phase Modulator Using A W- Shaped Index Profile; Sep 6 1988					
	41	50	DERI, R.J., et al., Low-Loss Multiple Quantum Well GalnAs/InP Optical Waveguides; Feb 21, 1989					
	42		DEVAUX, F. et al., 20Gbit/s Operation of a High-Efficiency InGaAsP/InGaAsP MQW Electroabsorption Modulator With 1.2-V Drive Voltage; IEEE Photonics Technology Letters, VOL 5, No.11, Nov 1993, pg 1288-1290					
	43	ď.	DOERR, C.R. et al., Chirping Of The Waveguide Grating Router For Free-Spectral-Range Mode Selection In The Multifrequency Laser, IEEE Photonics Technology Letters, April 1996, Vol. 8-No. 4, pp 500-502					
	44	1	DOERR, C.R. et al., Chromatic Focal lane Displacement in the Parabolic Chirped Waveguide Grating Router, May 1997, Vol. 9-No. 5, pp 625-627					
	45		DRAGONE, c. Efficient NxN Star Couplers Using Fourier Optics, pp 479-48, March 1989, Vol. 7-No. 3, Journal of Lightwave Technology					
	46	ı	FISCHER, et al., Singlemode Optical Switches Based on SOI Waveguides with Large Cross-Section, Electronics Letters, March 3, 1994, Vol. 30-No.5, pp. 406-408.					
	47	W	FISCHER, K. et al., Sensor Application Of SiON Integrated Optical Waveguides On Silicon; Elevier Sequoia, 1992; pg 209-213					
	48	ن	FISH, G. et al., Monolithic InP Optical Crossconnects: 4x4 and Beyond, JWB2-1, Pg 19-21					
	49	~	FURUTA, H. et al, Novel Optical Waveguide For Integrated Optics, Applied Optics, VOL. 13, NO. 2, Feb. 1974, pg. 322-326					
	50	1	GINI, E. et al., Low Loss Self-Aligned Optical Waveguide Comer Mirrors in InGaAsP/InP, We P2.22					
	51	4	GOEL, K. et al Design Considerations for Low Switching Voltage Crossing Channel Switches; Journal of Lightwave Technology, VOL 6, No.6, June 1988; pg 881-886					

Examiner Signature	Date Considered	
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